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INDUSTRIAL ACCIDENT AND COMPENSATION STATISTICS

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The subject of accidents to workers in the industries of the United States is one involving many interests other than those of the employer and the employee, and possessing an economic importance which would scarcely be realized by those who have not given the matter special attention.

Upon a conservative estimate the economic or wage loss to workers from the industrial accidents of a year is in excess of \$400,000,000, probably less than one-fourth of which is made good by compensation benefits.

Employers pay out in compensation and liability insurance premiums and in direct payments probably in excess of \$150,000,000 a year. The economic loss from labor turnover and time lost from productive labor impose upon the employer a huge loss in production.

The community, aside from the employers and workmen, must suffer from the injured workers' wage loss. With inadequate compensation and with savings exhausted, the injured employee not infrequently must receive help from relatives, friends, church, fraternal organization, or charity. The loss in purchasing power is also an important item.

Statistics of accidents and compensation should be so organized as to assist every interest concerned in this great problem. The enormous waste of these accidents must be reduced so far as humanly possible.

The hazards of dangerous machinery, dangerous operations, unsafe practices, dangerous places of work, and injurious materials must be disclosed so that they may be eliminated or the hazard diminished.

The happy mean of compensation benefits must be found which will come as near as possible to assuming the burden actually due to industrial accidents without encouraging the unnecessary prolonging of reliance upon compensation benefits. Disabilities must be studied in relation to the adequacy of medical service, and serious permanent disabilities with special reference to actual economic consequences, concerning which we know little.

Common sense suggests that these objects can be attained only by the analysis and study of accident and compensation experience to ascertain among other things—

1. Where, how, and why accidents occur.
2. Why so many accidents result in permanent disability or in long continued temporary disability.
3. The adequacy of present laws as shown by wage loss and compensation payments.
4. Efficiency of administrative organization and practice.
5. Cost of compensation benefits for the determination of proper insurance premium rates.

When, in September, 1908, the United States Bureau of Labor Statistics published an estimate of industrial accidents in the United States by Frederic L. Hoffman¹ it was found necessary to say that there were no statistics of value from which a reasonably accurate approximation could be made. Apparently the best method possible was to estimate the deaths due to accidental causes among occupied males 15 years of age and over upon such Census data as were available, and to assume that 50 per cent of such casualties were due to causes arising out of the occupation of the injured. This crude method led to the conclusion that the number of fatal occupational accidents at that time was between 15,000 and 17,500 per annum.

When again, in 1915, a second attempt was made to estimate the number of occupational accidents in the United States by Mr. Hoffman with the coöperation of the Bureau of Labor Statistics,² it was found to be still true that the available accident data were entirely inadequate for any really satisfactory estimate. An entirely different basis was used for the estimate published in 1915. At this time, use was made of available statistics in certain industries, including some especially valuable studies, which enabled one to approximate the fatal accident rate prevailing in a number of the more important industrial groups. For other industrial groups, it was necessary to assume a fatal accident rate based on a knowledge of rates in similar industries in foreign countries, fragmentary information of conditions in this country, and to assume the probable rate prevailing here. With this crude

¹*Bulletin of the United States Bureau of Labor, No. 78, September, 1908.*

²*Bulletin of the United States Bureau of Labor Statistics, No. 157, March, 1915.*

method, and with the information as to the number of employees as reported by the Census, it was estimated that the approximate number of fatal industrial accidents among American wage earners for the year 1913 was 25,000. Upon the basis of the relation of non-fatal to fatal accidents as indicated by the experience of Austria, where the available statistics were unusually complete, it was estimated that disabilities of more than four weeks duration numbered approximately 700,000.

The past fifteen years has been a period of continuous work, by both private and public agencies, for accident prevention. Notable have been the activities of the National Safety Council and many of its individual members, the Interstate Commerce Commission, the Bureau of Mines, the Factory Inspection Departments and the Compensation Commissions of a few of the states. That this movement has had a marked effect in reducing accidents, there can be no doubt, but just what effect it has had upon the country as a whole cannot be measured by any data available. One would not be justified, upon any information at hand, in estimating the number of deaths from industrial accidents at the present time at less than 20,000 a year. Even such an estimate must be considered very conservative. Accepting the figures of the American Accident Table,³ this number of fatal accidents indicates no less than 2,500,000 temporary lost time industrial accidents in a year, with time losses aggregating over 37,710,000 working days. The permanent total disabilities, on the basis of this same table, number 1,627, and the permanent partial disabilities 100,000, of which 72,000 are on account of dismemberment or total loss of use of some member, and 28,000 are due to other causes.

Some rough measure of the economic loss to injured wage earners resulting from this number of industrial accidents yearly may be made by assuming an average daily wage of \$2.50 a day for the working days actually lost on account of temporary disabilities, and for permanent disabilities and deaths the same wage rate during the periods recommended by the Committee on Statistics of the International Association of Industrial Accident Boards and Commissions as reasonable equivalents in working days of the working time lost on account of such disabilities

³*Proceedings of the Casualty Actuarial and Statistical Society of America*, Vol. VII, Part I, No. 15, p. 36 et seq.

with a discount of one-third allowed to express present values. An estimate upon these assumptions shows economic losses for:⁴

	Working days lost	Wages lost
Temporary disabilities	37,710,000	\$ 94,275,000
Permanent total disabilities	9,762,000	16,270,000
Dismemberment and total loss of use of member	66,600,000	111,000,000
Other permanent partial disabilities	12,936,000	21,560,000
Deaths	120,000,000	200,000,000
Total	247,008,000	\$443,105,000

Whatever differences of opinion may exist as to the reasonableness of the valuations placed upon the permanent disabilities and deaths, there can be little question about the time and wage losses given for temporary disabilities or in regard to the enormous waste due to industrial accidents.

Wherever proposals for workmen's insurance and compensation laws have been given serious consideration, or wherever such laws have been enacted, an immediate demand has been made for statistics of industrial accidents to guide legislators and experts in the framing or revision of the laws, administrative authorities in the enforcement of the law, insurance carriers in the determination of their premium rates, and industrial employers in measures of safety and accident prevention.

The demand for statistics of industrial accidents and workmen's compensation, which would permit comparison of the experience of various states and countries and enable each country to profit by the experience of others was voiced at the very beginning of the workmen's insurance movement in Europe. As early as 1889, at the first International Congress on Workmen's Accidents and Insurance, held in Paris, the need of some degree of uniformity in the accident and insurance statistics of the various countries was discussed. At the succeeding international congresses, at Berne in 1891, and at Milan in 1894, the question was the subject

⁴Estimates of wage losses due to accidents have sometimes been made upon the assumption of a higher average daily wage and without discount for present value and have been defended as reasonable. For the present purpose it was preferred to make an estimate so conservative that no question of overstatement could possibly be raised. No attempt has been made to include any estimate for the cost of medical and hospital treatment necessary on account of these accidents.

of one of the resolutions, and the congress at Düsseldorf in 1902, by resolution, instructed its permanent committee to coöperate with the International Institute of Statistics and the International Association for Labor Legislation in working out a plan for international statistics of industrial accidents.

At the meeting of the International Institute of Statistics in London in February, 1905, the first definite statement of general principles to be followed in formulating a plan for international statistics was submitted and adopted. This plan provided for the collecting of statistics of the number of injured persons; the computation of the number of workmen exposed to risk in terms of full time workmen, that is, workmen having worked 300 days of 10 hours each in the year; the preparation of broad standard classifications of industries, causes of accident and nature of injury; and statistics of the number of widows and orphans surviving fatally injured workmen.

The task of working out a plan for uniform international statistics, on the basis of the principles approved as above, was submitted to a joint committee of the International Institute of Statistics and the International Congress on Workmen's Accidents and Insurance. The report of this committee was submitted to the International Institute of Statistics at its Paris meeting, July 5, 1909, and to the International Congress on Workmen's Accidents and Insurance in Vienna, September 21, 1909. The first attempt to present a report of international statistics on industrial accidents, under the plan recommended, appeared in the July, 1913, issue of the *Bulletin des Assurances Sociales*. This report, while containing an enormous amount of valuable statistical information in regard to the individual countries, is a convincing illustration of the practical difficulties in the way of comparison of the accident and compensation statistics of any two countries. For the purpose of comparison, the statistics of the committee's report were no more valuable than would be those of two American states at the present time.

The demand for industrial accident statistics for the entire United States, for any state as a whole, or for any industry as a whole, is a natural one, but brief consideration only is necessary to convince one that such statistics are practically impossible of realization under compensation laws now existing or likely to be enacted for some years. Any statistics which could be compiled

from our existing records would need to be supplemented by extensive estimates of a somewhat speculative character.

It may be stated without hesitation that, except where a workmen's compensation law is applicable, complete accident reports cannot be secured and should not be expected. Occupational accident statistics must be made up from records kept in the plants where the accidents occur, and from reports of such accidents made to some designated administrative authority. Such records and reports must be complete, or practically so, if they are to be of the highest value. Experience has shown that employees oftentimes will not report an accident or the employer does not make a record of an accident reported unless the accident appears to be immediately serious or unless there is some financial motive. This has been confirmed in extensive and intensive investigations by the U. S. Bureau of Labor Statistics in which original records were studied. Further evidence of this is found in the failure of accident reporting laws which existed before the enactment of workmen's compensation statutes, in the incompleteness in the reporting of short time accidents causing disability for which no compensation is payable, and in the failure of the occupational disease reporting laws. In all these cases the failure of the law was due to the same cause—the lack of any financial interest on the part of the injured employee, or of the employer, or of the physician, to make reports.

Even in states where workmen's compensation laws have been enacted, many accidents are not and will not be reported for very definite and easily intelligible reasons:

1. Many industries are not covered by the compensation law, and there is therefore no motive for reporting. Some state laws cover only hazardous industries, some only a selected list of highly hazardous industries, others while perhaps covering the same industries require an election of the compensation act on the part of the employer. In nearly all states, agricultural employments and domestic service are not covered, nor are casual workers.

2. Many of the states provide for the exclusion from the compensation law of employers with less than a specified number of workmen, this specified number being in five states as low as three, but in other states being four, five, six, or even as high as ten, eleven, or sixteen.

3. Short-time accidents are not covered by the law in most of the states. The waiting time during which no compensation

is payable varies greatly, being as low as three days in several jurisdictions, but as high as seven days, ten days, or fourteen days in other jurisdictions. The exclusion of these short time accidents greatly affects the number subject to compensation. Thus, a seven-day waiting period means for industries in general the exclusion from compensation of about 45 per cent of all accidents, a ten-day period 50 per cent, while a fourteen-day period means the exclusion of over 60 per cent.

The result of all this is that even in those states where a majority of employees are covered by the workmen's compensation law, a large percentage of the accidents which occur are not under the law and are not reported. In many of the compensation states, probably more than half the lost time accidents are never reported even in those employments which are subject to the compensation law.

It should not be understood from what has been said that no effort is made by administrative authorities to secure reports of industrial accidents. It is true that many of the state commissions have no jurisdiction over accident reports and some of them are strongly of the opinion that their activities ought not to extend to jurisdiction over accident reporting, but should be limited exclusively to the adjudication of compensation claims. On the other hand, a considerable number of the compensation commissions regard it as one of their most important duties, and are persistent in attempting to secure reports of all accidents, and have been most successful in accident prevention work.

This absence of accident reporting is particularly unfortunate in that it limits accident prevention work by withholding knowledge of the location, nature and extent of accident hazards. Probably most employers who are not reporting accidents to their workmen are doing no accident prevention work, and have no definite knowledge of the full extent of the losses resulting to themselves as well as to their men on account of accidents, a large percentage of which are preventable. But let us clearly distinguish. The absence of accident reports from some employers and the incompleteness of reports from others are not reasons for neglecting to make the best practical use of the experience available in cases reported. Good representative statistics are oftentimes an excellent substitute for complete statistics. The analysis and study of accident experience of half, or even of a tenth, of an industry will usually show what is happening practically

throughout the industry, and will serve many of the purposes of accident prevention work.

The serious difficulties in the way of making comparisons of the industrial accident and workmen's compensation statistics of various countries had made the subject of uniform accident reporting and standard methods of tabulation of industrial accidents and compensation one of serious concern to the United States Bureau of Labor Statistics for some years prior to 1914. In its numerous studies of accidents and of workmen's compensation, and especially in the preparation of its *Twenty-fourth Annual Report, Workmen's Insurance and Compensation Systems in Europe*, the Bureau had found the lack of uniformity in compensation law and administrative organization, and the absence of generally accepted definitions, a very serious obstacle in the way of making much desired comparisons of the experience of the various countries. For this reason it seemed especially important that an attempt should be made early in the development of the workmen's compensation movement in the United States to work out a plan for uniform accident and compensation statistics which it might be possible for the various states to adopt and gradually to put into operation.

A conference of officials, representatives of large employers and insurance companies, and others most interested was accordingly called by Commissioner of Labor Statistics Royal Meeker, and the first meeting was held in New York City February 26, 1914. In this first meeting, and in four others held during 1914 under the same auspices, marked progress was made, the subjects discussed being:

1. The definition of a reportable accident.
2. The unit of risk for computation of accident rates.
3. The classification of industries.
4. The computation of the rate of accidents.
5. Accident report forms.
6. Time of reporting accidents.
7. Classification of accidents according to consequences.
8. Number of men exposed to risk.

In April, 1914, at a meeting held in Lansing, Michigan, The National Association of Industrial Accident Boards and Commissions was organized "to bring into closer relation with one another the various boards and commissions administering compensation laws in the United States, to effect so far as possible

uniformity of legislation and administration of such laws, and to encourage and give effect to all measures looking toward the prevention of accidents and the safeguarding of plants and machinery." On January 12, 1915, a special meeting of this association was held in Chicago for the purpose of considering the standardization of accident statistics. At this meeting a committee on statistics and compensation insurance cost was created and charged with the duty of preparing as expeditiously as possible reports on:

1. Uniform tables for the establishment of compensation costs.
2. Uniform classification of industries.
3. Uniform classification of causes of accidents.
4. Uniform classification of nature of injuries.

The committee was directed to send a copy of these reports to each member of the association, and to make a final report at the regular meeting of the association in September of the same year.

The instructions given by the association to the committee at the time of its creation show that the association little knew the difficulties of the committee's task. Since its organization, the committee has held some twenty meetings and submitted six reports to the association. These reports have been included in the proceedings of the association as printed in *Bulletins of the U. S. Bureau of Labor Statistics*, and in several numbers of the Bureau's *Monthly Labor Review*. They have finally been brought together and published in full as *Bulletin 276* of that Bureau.

The conferences called by Commissioner Meeker in 1914 made such progress that when, in January, 1915, the newly organized Association of Industrial Accident Boards and Commissions appointed a committee on statistics and compensation insurance cost, several members of which had participated in all of the earlier conferences, the new committee was able to take a flying start by adopting nearly all the conclusions of these conferences.

The purpose which the committee has kept clearly before it throughout has been to work out standard definitions, classifications, forms, and methods which will be practicable in spite of the limitations of the widely varying state compensation laws, and at the same time serve the needs of the commissions, state labor department officials, employers, employees, insurance carriers, legislators, and the public. The scope of the committee's work

has included standard definitions of such fundamental terms as accident, cause of accident, permanent total disability, permanent partial disability; standard forms and practice for accident reporting, classifications of industries, causes of accidents, location and nature of injury, and extent of disability; standard method of computing accident frequency rates; formulation of standard scale of weights to express the severity of accidental injuries in terms of time loss; standard forms of tables for the presentation of accident and compensation statistics; and standard methods of comparing compensation costs. The committee has been charged also by the association with the duty of studying and recommending standard uniform schedules for permanent partial disabilities in compensation laws.

The committee found it necessary to begin with the elements and formulate definitions of given terms in order to secure some degree of uniformity and usage. It was found that some state laws attempted to require reports of all accidents, some only those involving loss of time, others only those resulting in loss of time of more than one week, ten days, or two weeks. It was obvious that statistics based upon such variable definitions of the most elementary term could never be used to indicate accident hazard, or rate of accident occurrence. While some states were attempting to secure reports of all lost time accidents, others were deliberately neglecting from 40 to 60 per cent of them. To avoid this difficulty, the committee recommended the adoption of the term *Tabulatable Accident*, which it defined as one resulting in death, permanent disability, or loss of time other than the remainder of the day, shift, or turn on which the injury occurred. To describe the accidents subject to compensation under the law of each particular state, the term *Compensable Accident* was adopted. To cover that class of accidents resulting in no time and wage loss, but requiring some medical expenditure, the term *Reportable Accident* was adopted, inasmuch as it was recognized that any accident which was the subject of expenditure should be reported to the administrative authority.

To assist in securing uniformity in the forms and practice of accident reports, a standard form of accident report was worked out by the committee. This provided for a first, and for supplemental and final reports. The first report followed closely, with slight changes, the form originated by the American Association for Labor Legislation in December, 1911. It was recom-

mended that, subject to the requirement of state laws, all reportable accidents should be reported to the proper state authority within forty-eight hours after occurrence. While the exact time within which an accident should be reported is not especially important, it seemed necessary to emphasize promptness of reporting as of very decided importance in guarding against failure to report, and in permitting early investigation in case of need.

The classification of industries according to the nature of the business for the purpose of accident statistics was one of the earliest and most troublesome tasks of the committee, as well as one of the most important with reference to accident prevention and insurance premium rates. The greatest confusion in industrial classification existed and apparently no American or foreign classification could be found which seemed to have any scientific or logical basis. Inasmuch as a great part of the insurance under compensation laws is carried by the casualty insurance companies, the classification used by them, which is the development of many years, was necessarily taken as the starting point with the committee. Although the committee has published two revisions of its original classification, the result cannot be considered satisfactory or final. The tendency has been toward simplification by the omission of classifications which are practically duplicates and the combination of many other classifications which represent similar and approximately equal hazards. The committee gave much study, without success, to the question of whether it was possible to devise a classification of industries which could be adopted not only for compensation but also for purposes of census and other industrial statistics. The revised classification of industries is believed to be the best of its kind yet formulated. Its adoption by the agencies interested in workmen's compensation would be an important step toward securing uniformity in industrial accident statistics. The committee's revised classification of industries includes eight divisions, thirty-six schedules, and one hundred fifty-three groups. The sub-division of the groups into classifications was made in the lists formerly published by the committee. In the latest revision, however, these classifications have been omitted because an entirely satisfactory revision had not been worked out.

The first step in the preparation of a classification of causes of accidents was the adoption of a standard definition, as practice was found to vary greatly in the different jurisdictions. The

whole purpose of the classification of accidents by causes is accident prevention. The committee, therefore, in its definition of cause of accident adopted the recommendation that the accident should be charged to that condition or circumstance the absence of which would have prevented the accident; but if there be more than one such condition or circumstance, then to the one most easily preventable. The question of remote initiating cause or of personal responsibility was ignored as in most cases impossible of determination and after all often a matter of personal judgment. The immediate cause as defined by the committee is the tangible fact capable of definite ascertainment. To go further would be to venture into the field of speculation, where personal bias would too often determine the result.

The committee's original classification of causes was adopted in 1916, but was revised two years later upon the experience of members of the committee representing a considerable number of state commissions. The present classification includes eleven general headings and several hundred sub-headings, in addition to a classification of power work machines with about three hundred sub-headings.

The committee's classification of causes does not include the desirable sub-headings under the general head Poisonous Substances and Occupational Diseases. This is due to the lack of experience data which will permit the preparation of the desired lists.

Classification by location and nature of injury refers to the injury sustained at the time of the accident, as distinguished from the result or consequences of the accident. The location of injury classification follows the common anatomical divisions, beginning with the head and ending with the feet. Rules of practice were also adopted to guard against a variety of interpretations.

The classification of extent of disability refers merely to the classification into temporary total or partial disability, permanent total or partial disability, and fatal, distinction being made between those permanent disabilities which are dismemberments and those which result in impairment of function.

The classification of degree of partial disability is for the purpose of giving a measure of the partial disability where the character of the compensation act permits. Under some of the laws, however, where the compensation is based on loss of earnings,

no determination of the degree of partial disability is ever made.

For the purposes of accident prevention, it is particularly important that there should be tabulations permitting some measurement of accident hazard, and for checking up the effectiveness of accident prevention measures. Tables showing the frequency of accidents have been commonly used for this purpose. Attempts to compare the hazards of different industries, or of the same industry at different times, have been somewhat unsatisfactory because of the lack of a definite basis of comparison. Two chief difficulties present themselves: (1) the lack of an accepted rule as to what accidents shall be counted, and (2) the lack of a uniform and adequate basis for the computation of accident rates.

The adoption of the standard definitions already referred to will readily remove the first difficulty. The determination of a uniform satisfactory unit of exposure as the basis for measuring the frequency of accident occurrence presents a much more serious question. The common method of compiling accident statistics was to express the frequency rate per year in terms of number of accidents per one thousand workers. This term was usually understood to be based on average number of workmen, which investigation showed to mean sometimes the usual or normal number, sometimes the average number, arrived at by an off-hand guess, sometimes the average number based upon various methods of computation. Usually no account was taken of the number of days or hours in the year during which the workmen were actually exposed to risk of accident. Of two plants showing the same accident rate on paper, one might represent an exposure of 365 days of 10 hours or 365,000 hours, the other 240 days of 8 hours each or 192,000 hours. With such a method of computation, accident rates were indefinite and meaningless because of the indefinite and variable factors.

The method recommended by the joint committee of the International Institute of Statistics and the International Congress on Industrial Insurance and Accidents, which has already been referred to, provided for a unit of exposure in terms of so-called full time workers, that is, men working 300 days of 10 hours each per year, or 3000 hours. This plan was familiar to members of the committee from its use in German and Austrian accident reports. The plan had also been used by the U. S. Bureau of Labor Statistics in its studies of accidents in the iron and steel and machine building industries, where the number of man hours

worked per year had been ascertained from accurate records in each establishment. This unit of exposure, it should be understood, is an arbitrary one and was not intended to suggest a ten hour day or a three hundred day year as the actual or ideal working day and working year in industrial plants. It is merely a unit of measure for the purpose of ascertaining accident frequency.

This unit of measure of the three hundred day worker was recommended for adoption by the committee in 1915, and was used to a considerable extent in accident statistics. Some large industrial plants adopted the method for use in tabulating their individual records for purposes of accident prevention. However, a certain amount of criticism arose, due to some dissatisfaction on the part of both employers and employees with this unit of measure. It was objected that the three thousand hour worker implied some judgment regarding the proper length of the working day and the working year. It was pointed out that the eight hour day was gradually becoming the standard working day, and that a unit of measure of twenty-four hundred hours per year would more nearly reflect the working time in some industries. The two thousand hour year was also suggested as more nearly representative for a full time year in the coal mining industry. The committee, thereupon, after careful consideration of these objections, recommended a change in the unit of measure from the three thousand hour year to a thousand hours of exposure, and at its meeting in December, 1919, recommended that both accident frequency and severity rates be computed on the basis of one thousand hours exposure instead of three thousand hours exposure, as heretofore. The committee pointed out that the thousand hour exposure was an acceptable scientific mathematical unit of measure to which any other unit of exposure was readily convertible.

This method furnished an accurate measure of the frequency of accident occurrence. The true measure of the hazard of the industry, however, is not expressed by the mere number of accidents per thousand hours' exposure. Entirely different hazards might be expressed by the same accident frequency rate, since in such rates the most trivial lost time accident is given quite as much weight as a death or permanent total disability.

Fully 95 per cent of all lost time accidents leave no permanent impairment of earning capacity, and a great majority of them

cause only a few days' disability. A single death results in more economic loss than several hundred average temporary disabilities. Furthermore, no fixed relation exists between the number of deaths and of permanent and temporary disabilities in various industries. While deaths are infrequent in the textile industries, and in many of the lighter machine trades, they are many times more frequent among coal miners, railway trainmen, seamen, and on construction work. Accident rates which do not take these differences into account are inaccurate and misleading.

The committee, accordingly, sought some method of reducing temporary disabilities, permanent disabilities, and deaths to some common denominator expressive of economic loss or industrial hazard. The time loss was readily fixed upon as the most significant, stable, and convenient expression. It was naturally suggested, since the temporary disabilities, which constitute 95 per cent of all accidents, are of necessity measured in the record and compensated on the basis of days lost. Furthermore, no other measure seems readily available. The physical results could hardly be reduced to a common denominator. The compensation cost would not serve the purpose, as it would vary greatly from state to state, and change with amendments to the law. The wage loss, likewise, would vary from locality to locality and from time to time. The time loss is apparently the only available unit of measure which is both significant and stable.

For the purpose of expressing the hazard indicated by deaths and permanent disabilities in terms of time loss it was assumed that the injured workman of average age, if not disabled, would have had a working life expectancy equal to about two-thirds of his full life expectancy as shown by the American Experience Table. The approximate average age of workmen fatally injured was found to be thirty-three years and a reasonable time loss equivalent was fixed at twenty years, or six thousand working days. An equal time loss was assigned to permanent total disability, while proportionate losses were assigned for permanent partial disabilities upon a percentage rating of degree of disability expressive of the judgment of the committee after a study of foreign and American disability schedules and American experience.

The use of this table of time loss equivalents for weighting deaths and permanent disabilities to show accident hazard permits the computation of a single rate expressive of accident severity in terms of days lost per one thousand hours' exposure. It is thus

relatively easy to compare accident experience from year to year, from industry to industry, and from state to state. The method is equally suitable for use in any establishment with a sufficient number of employees to make a rate significant and has been so used.

The scale of weighting recommended is intended merely as a standard for comparing severity of accident injuries and the accident hazards of employment, but is not set up as a basis for awarding compensation.

The sixteen standard tables and the standard method of comparing compensation costs recommended by the committee need only be mentioned here. Three of the tables recommended—those relating to accident frequency and severity rates, and that designed to compare time losses resulting from the various causes—are equally useful for a state jurisdiction or for the individual employer, and have been so used. Some of the other tables, while intended primarily to assist in analyzing experience for ascertaining costs, determining premium rates, and other administrative purposes, are applicable to individual uses.

The Committee on Statistics is continuing its work, for it is in no sense ended. A solid foundation has been laid which, it is believed, will stand without important changes (except perhaps such as are to be expected in the classification of industries).

The usual difficulties between acceptance in principle and adoption into full operation will necessarily make progress in standardization somewhat slow. Commissions are obliged to take the position that the adjustment and payment of claims must take precedence over any other work. In most states, therefore, additional appropriations must be made available before material changes or expansion of statistical work is possible.

A considerable number of commissions have made a beginning in putting the committee's recommendations into effect and year by year better and more adequate statistics are put forth, including valuable special studies. The questions concerning proposed amendments to the laws and their probable effect, with which commissions and legislators are constantly confronted, will gradually force a continuous study and analysis of the facts of actual experience in a systematic manner—which is the purpose of all statistical work.